

### REMARKS

Claims 1-30 are pending in this application. All claims except for claims 7, 17 and 27 stand rejected as being anticipated by or obvious in view of Mullins et al. (US 6, 476,384). The Examiner's objections and rejections are addressed below in substantially the same order as in the office action.

### REJECTIONS UNDER 35 USC §§ 102 & 103

Claims 1, 3-6, 8, 11, 13-16, 18, 21, 23-26 and 28 stand rejected under 35 U.S.C. 102(e) as being anticipated by Mullins et al. (6,476,384 B1). Claims 2, 9-10, 12, 19, 20, 22 and 29-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mullins (6,476,384 B1). The Examiner cites in part to the following paragraph in Mullins '384 to reject these claims:

When used to determine GOR, it is necessary that the module has a channel that is sensitive to the methane peak in the measured spectrum. This peak occurs at 1671 nm with a shoulder at 1650 nm. Two approaches for detecting this peak are proposed. In the first a narrow band filter is used to detect only the 1671 nm peak. A suitable filter would have 1671 nm center wavelength (CW) and 15 nm full width half maximum (FWHM). In the second approach, the channel detects both the peak and the shoulder. In this case, a 1657.5 nm CW and 35 nm FWHM filter can be used. The different filters give different responses for signal level and background level and so the choice of which is most appropriate will be made on a case by case basis. If desired, both wide and narrow band methane channels can be provided although this will be at the expense of the number of channels available for other wavelength measurements. (emphasis added)

This paragraph, however, describes an apparatus that uses only one channel or wavelength for methane. Applicant in paragraph 0008 of the pending application, a portion of which is reproduced below, made this observation relating to Mullins '384:

Unlike Mullins US 6,476,384 (Mullins '384), which describes a method for determining GOR based on two wavelengths, the first located near a methane-gas spectral peak and the second located near a liquid-hydrocarbon spectral peak (representing oil), the present invention uses

two wavelengths that are both near a single spectral peak for methane (i.e., two regions of the same methane peak). ...

The fact that only one wavelength is used by Mullins '384 is also emphasized in its Summary:

A first aspect of the present invention provides a method of determining GOR comprising subjecting a fluid to spectroscopic analysis at a **first wavelength** sensitive to gas and a second wavelength sensitive to oil...

With respect to the independent claims 1, 11 and 21, Mullins '384 does not teach or suggest measuring a second optical density for the fluid at a *second wavelength* region associated with the methane peak. Rather, Mullins '384 teaches one wavelength for gas and one wavelength for oil. Because Mullins '384 does not teach each and every recitation of the independent claims, Applicant submits that these claims are allowable over Mullins '384 and in condition for allowance.

Claims 2-6, 8-16, 18-26 and 28-30 each depend from an independent claim believed to be in condition for allowance and are allowable on at least those grounds.

Claims 7, 17, and 27 have not been rewritten in independent form since they are believed to depend from claims that are in condition for allowance.

**CONCLUSION**

For all the foregoing reasons, Applicant submits that the application is in a condition for allowance. No fee is believed due for this paper. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 02-0429 (584-30872-US).

Respectfully submitted,

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